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SOV/20-129-6-23/69

AUTHORS: Kogan, S. D., Paschnik, I. P.,  
Sultanov, D. D.

TITLE: Difference in the Periods of Seismic Waves Which Are Excited  
in Underground Explosions and in Earthquakes

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 6 pp 1283-1286  
(USSR)

ABSTRACT: The authors compare the data on the predominating periods of seismic vibrations in explosions and in surface earthquakes of equal intensity. On December 19, 1957, at 9.00 A. M. Greenwich time, 1000 tons of ammonite were exploded 30 km southeast of the railroad station of Arys' (Tashkent line) ( $\varphi = 42^{\circ}12'15''$  N,  $\lambda = 69^{\circ}03'02'', 59$  E) for scientific purposes. This charge was fixed in a depth of 40 m in a shaft chamber (in clay layers). On March 25, 1958 3100 tons of ammonite were exploded at 9.00 A. M. Greenwich time in the rayon of Pokrovsk Uralsk ( $\varphi = 60.2^{\circ}$  N,  $\lambda = 59^{\circ}, 9$  E) for the purpose of blasting out a river channel of, together, 1100 m. In the USSR the explosions were recorded by broad-band seismographs designed by D.P.Kirnos (SK), by more sensitive modernized seismographs, and also by *Y*.

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Difference in the Periods of Seismic Waves Which 307/20-129-6-23/69  
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other instruments. The present paper is based mainly on measurements with SK. In the case of underground explosions all types of waves were recorded which are excited in the case of earthquakes with their origin in a granite layer. At the stations with epicentral distances of up to 1000 km, the following front waves broken on the boundaries of the Earth's crust were recorded in the explosions: sedimentary layer - granite layer ( $P, S$ ), granite layer - basalt layer ( $P'$ ,  $S'$ ), the Mohorovičić boundary ( $F_n, S_n$ ) and also surface waves. Ye. M. Butovskiy et al.

(Ref 1) wrote a report on the holographs of volume waves produced by heavy explosions and on the structure of the Earth's crust in (Soviet) Central Asia. At epicentral distances of more than 1100 km direct longitudinal waves  $P$ , direct transversal waves  $S$ , and also surface waves  $S'$  were recorded. Pictures of the recorded waves are shown in figure 1. At the same epicentral distance the period of the surface wave in the explosion is 5 times as small as the period of a surface wave in an earthquake. The authors also dealt with earthquakes near the surface which were recorded at the station Frunze during the first half year. ✓

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Accordingly, the periods of volume waves do not or only slightly depend on the epicentral distance, on the depth of the center, and on intensity. In the case of epicentral distances of from 100 to 1000 km the periods of the longitudinal waves in most cases are 0.6 to 2.0 sec, in explosions 0.2 to 0.8 sec. The periods of transversal earthquake waves at epicentral distances of up to 1000 m are from ~1 to approximately 3 - 4 sec. In surface waves recorded by a broad-band seismograph of the type SK the difference in the periods of earthquakes and explosions is the greatest. V. I. Keylis-Borok (Ref 4) presumed that surface waves in explosions must have smaller periods because of the difference in center dimensions than surface waves in earthquakes, providing that the periods of body waves and their energy are equal in both cases. This conclusion is confirmed by other considerations. The data obtained here furnish a new criterion for the purpose of clearly distinguishing between explosions and earthquakes. There are 4 figures and 4 references, 3 of which are Soviet.

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Difference in the Periods of Seismic Waves Which SCOV/20-129-6-23/69  
Are Excited in Underground Explosions and in Earthquakes

ASSOCIATION: Institut fiziki Zemli im. O. Yu. Shmidta Akademii nauk SSSR  
(Institute of Physics of the Earth imeni O. Yu. Shmidt of the  
Academy of Sciences of the USSR)

PRESENTED: September 16, 1959, by N. N. Semenov, Academician ✓

SUBMITTED: September 16, 1959

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D039/D112

Results of seismic observations ...

with the aid of **CBK-M** (SVK-M) type seismographs having a pass band of 0.2 - 2.0 seconds. Seismograms obtained by **CBK** (SVK), **ERK** (SGK) and **ERK-M** (SGK-M) seismographs were also used in the investigations. The SVK-M and SGK-M seismographs have been described by I.P. Pasechnik and N.Ye. Fedoseyenko (Ref. 8: "Izv. AN SSSR, seriya Geofiz.", No 12, 1959.) and F.I. Monakhov, I.P. Pasechnik and N.V. Shebalin (Ref. 13: Seismicheskiye stantsii SSSR rabotayushchiye po programme MGG [Seismic stations of the USSR working under the IGY program], Izd-vo AN SSSR, 1959.). The authors conclude that the vibrations produced by these explosions can be detected at fairly long distances from the place of explosion. Thus, nuclear explosions with a force of 19 kt were detected up to a distance of more than 16,000 km (by means of the SVK-M seismograph), and chemical explosions with a force of 3 kt - up to 9,000 km (by means of the Benioff seismograph). In the first arrivals, the  $P_n$  longitudinal waves were recorded at epicentral distances of 200 - 1100 km, the  $P$  waves at 1,200 - 10,100 km and the  $PKP$  waves - at an epicentral distance of more than 16,000 km (at the Soviet seismic stations at Mirnyy and the Banger Oasis in the Antarctic). In the case of atomic explosions, the  $S$  and  $S^*$  transverse waves were identified on the recordings of the Benioff seismograph within an epicentral-distance range of 200 - 500 km. Sur-

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Results of seismic observations ...

face waves were recorded at distances of 2,000 - 3,000 km. In a chemical explosion with a force of 3 kt carried out in Pokrovsk-Ural'skiy, the S direct transverse wave was recorded at an epicentral distance of 2,300 km by means of the Benioff seismograph. In the first arrival of the longitudinal wave, the motion direction corresponding to the compression phase was recorded at epicentral distances of up to about 700 km for the Logan explosion and up to 1,000 km for the Blanka explosion by a Benioff seismograph operating in a special network of stations. The amplitude corresponding to the compression phase is of a small intensity. By correlating the initial part of the recording, it was determined that the absence of the compression phase at great epicentral distances is associated with the loss of the first extremum. Probably this loss is connected both with the rapid attenuation of high-frequency oscillations characteristic for underground explosions, as well as with the distorting effect of the equipment used. In order to distinguish explosions from earthquakes by the first arrivals, a method adopted for studying the earthquake mechanism should be used. In contrast to normal earthquakes, the distribution of the signs of the Logan and Blanka explosions does not permit drawing nodal lines. According to the Benioff seismograph recordings, the period of the Pn and P\* longitudinal waves changes at epi-

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Results of seismic observations ...

by the D.P. Kirnos seismograph during chemical explosions and earthquakes of the same energy level showed that these periods are essentially different. During chemical explosions this period equals  $2.0 \pm 0.5$  seconds and scarcely varies with distance. At an epicentral distance of about 1,000 km it is 4 times shorter than the surface-wave period in earthquakes. A curve representing the dependence of the surface-wave period on the distance during earthquakes is expressed according to the data of S.L. Solov'yev and N.V. Shebalin (Ref. 12: "Izv. AN SSSR, seriya geofiz.", No 7, 1957.) by the formula  $T \approx 0.35\sqrt{\Delta}$ . This curve and a corresponding curve for the Arys' explosion are given in the paper. Observations conducted at the Frunze station agree with this dependence. It is stated that the surface-wave period may serve as one of the criteria for recognizing the recording of an explosion among earthquake recordings. The character of the change in the oscillation amplitude with an increase of the epicentral distance is different for various waves. For atomic explosions with a period  $T = 0.5 \div 0.7$  seconds the  $P_n$  wave amplitude decreases with distance according to the law

$$A_i \approx A_c \left( \frac{\Delta_i}{\Delta_o} \right)^{-2} e^{-0.0025(\Delta_i - \Delta_o)}.$$

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Results of seismic observations ...

For the P wave, the character of the change in the oscillation amplitude is more complicated. Within a range of 1,200 - 2,500 km the amplitude values are less than the values at large epicentral distances; considerable dispersion of these values was observed in the above-mentioned range. In the P wave, the maximum amplitude value was found at a distance of about 2,500 km after which it gradually decreased with an increase in the epicentral distance. A detailed analysis of these changes of the amplitude of the P wave was conducted by Yu. V. Riznichenko (Ref. 10: O seismicheskikh magnitudakh podzemnykh yadernykh vzryvov [On the seismic magnitudes of underground atomic explosions], in the present source, 53-87.). During both atomic and chemical underground explosions, the character of the seismic recordings, the type of the recorded waves, the predominant oscillation periods, etc., are practically the same. Ignoring the difference in the ground conditions at the place of the explosion, the seismic effect during chemical explosions is approximately 2-4 times greater than during atomic explosions. Experimental verification of the efficiency of a control system may be conducted with the aid of explosions of common explosives. Discussing the determination of the epicenter

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S/049/61/000/002/006/012  
D242/D301AUTHORS: Kogan, S. D., Pasechnik, I. P., and Sultanov, D. D.

TITLE: Seismic observations in the Antarctic

PERIODICAL: Akademiya nauk SSSR. Seriya geofizicheskaya.  
Izvestiya, no. 2, 1961, 231-237

TEXT: The authors interpret the results of seismic observations carried out as part of the IGY program at the Mirnyy and Oazis stations in Eastern Antarctica from June 1956 to December 1959. This interpretation is a continuation of previous work by the authors (Ref. 1: Seysmicheskiye nablyudeniya Sovetskikh seysmicheskikh stantsiy v Antarktike (Seismic Observations of Soviet Seismic Stations in Antarctica) Sb. "Seysmicheskiye i glyatsiologicheskkiye issledovaniya v period mezhdunarodnogo geofizicheskogo goda" Izd. AN SSSR, 1959) which gives a detailed map of earthquake epicenters for 1956 and 1957 based on their own data and material provided by the International Seismological Bureau and the Seismological Division of the US Coast and Geodetic Survey. One feature of the work at the Mirnyy and Oazis stations during this period is the

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absence of nearby earthquakes, apart from some oscillations recorded in August 1958 which were the probable result of various kinds of ice movement. As has been noted by F. I. Monakov, I. P. Pasechnik and N. V. Shebalin (Ref. 2: Seysmicheskiye i mikroseysmicheskiye nablyudeniya na Sovetskikh stantsiyakh v period MGG (Seismic and Microseismic Observations at Soviet Stations During the IGY) Izd. AN SSSR, 1959), a distinctive characteristic of earthquakes recorded at the Mirnyy station is the rather large period of the body waves; over epicenter distances of 2000 - 3000 km the P wave has a period of 6 - 8 sec and the S wave of 9 - 13 sec. According to the data of V. L. Belotelov, N. V. Kondorskaya and Ye. F. Savarenkiy (Ref. 3: Ob opredelenii energii uprugikh voln, porozhdayemykh zemletryaseniyem, Izv. AN SSSR, ser. geofiz., No. 5, 1960) for Pacific earthquakes recorded at stations in the USSR on the same apparatus, the respective periods for P and S waves are 4 - 5 sec and 6 - 8 sec over epicenter distances of 20 to 80°. These seismic observations confirm the geological views of P. S. Boronov (Ref. 4:

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Strukturnaya skhema Antarktiki, Inform. byull. Sov. Antarkt. eksp., No. 1, 1958) concerning the existence of a girdle of Alpine folds around the main East Antarctic Platform, since this zone coincides with the areas of earthquake epicenters shown in Fig. 3. But Boronov's opinion that active uplift is taking place along the littoral zone of the platform is somewhat of an enigma in view of the lack of earthquakes in Eastern Antarctica during the last  $3\frac{1}{2}$  years. The comparatively constant directions of the first P-wave movements indicate that tectonic processes along the whole girdle of Alpine fold-structures are mainly taking place in the same direction. During three earthquakes in November 1956, July 1958 and October 1958 one of the steeply-dipping nodal planes for the P wave had a latitudinal trend and the other a meridional trend. It would thus appear that the southern side of the latitudinally-trending fold-structures is rising, although data from a greater number of earthquakes are required to substantiate this assumption. Rayleigh and Love waves recorded in 27 earthquakes were compared with the theoretical curves cited by F. F. Evison, C. E. Ingham

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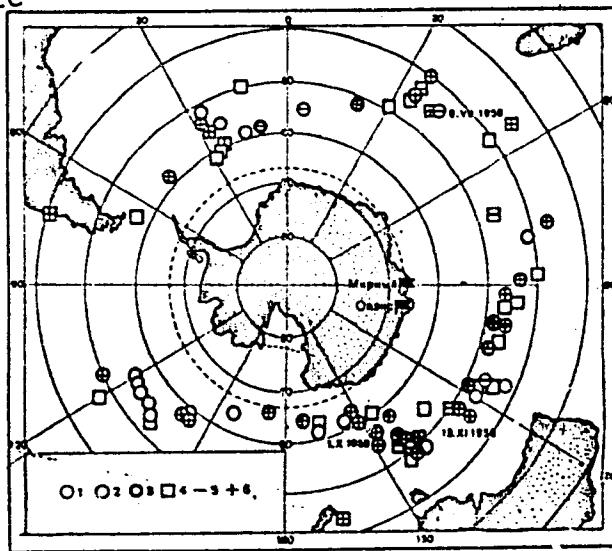
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Seismic observations...

Fig. 3. Epicenters of Antarctic earthquakes with an indication of the magnitude of M and the direction of the first movement of the P wave at Mirnyy and Oazis. 1 -  $4 < M < 5$ , 2 -  $5 < M < 6$ , 3 -  $M \geq 6$ , 4 - M not known; the first arrival of the P wave corresponds to a wave of compression (+) and to a wave of rarefaction (-)

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and R. H. Orr (Ref. 5: Thickness of the Earth's Crust in Antarctic, Nature, 183, No 1, 1959) in order to determine the crustal structure of Antarctica. The theoretical and observational data for waves of a group of 15 earthquakes with foci to the north, west and east of Mirnyy are given graphically. The scattering of the Rayleigh and Love waves implies an oceanic-type crust with a probable thickness of some 7 - 20 km in the area between the earthquake foci and the recording station. The waves of the other group of earthquakes travelled beneath both land and sea areas before reaching Mirnyy. The scattering of Rayleigh and Love waves during their passage beneath land and sea areas is also given graphically and would appear to suggest that the waves passed through an oceanic-type crust with an approximate thickness of 9 km and a continental-type crust with a thickness of around 40 km. Thus, the obtained results indicate that Eastern Antarctica is part of the whole Antarctic continent while the crustal structure of the area between the Antarctic and Alpide folds is typical of oceans. The authors conclude

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by noting the agreement of their observations with those made by Evison et al at the Scott Base, Hallett and Mirnyy stations during the earthquake of December 9, 1957, and they do not consider the neighboring areas of the Atlantic and Indian Oceans to be part of the East Antarctic Platform. There are 6 figures, 1 table and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: F. F. Evison, C. E. Ingham and R. H. Orr: Thickness of the Earth's crust in Antarctic. Nature, 183, No 1, 1959.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki zemli (Academy of Sciences USSR, Institute of Physics of the Earth)

SUBMITTED: September 19, 1960

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I. Institut fiziki Zemli AN SSSR.

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Safety Technique in Oil Industry. Gostoptekhizdat, 1950, 150 p, price:  
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So: A - 3080689

MANVELYAN, E.G.; SULTANOV, D.K., redaktor; UDALYY, A.M., tekhnicheskiy  
redaktor.

[Safety measures in assembling and use of a dual-pitman reduction  
gear pumping unit] Tekhnika bezopasnosti pri montazhe i eksploata-  
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"APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653910012-3

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TN 871.3#63

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MANVELYAN, Eleonora Grigor'yevna; SULTANOV, D.K., redaktor; AL'TMAN, T.B.,  
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tekhniki bezopasnosti v neftegazovoi i neftyanoy promyshlennosti. Moskva,  
Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1956.  
(MLRA 10:1)  
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(oil fields—Safety measures)

GRIGORYAN, Grigoriy Markovich, doktor tekhnicheskikh nauk; ALEKSIIN, Aleksandr Georgiyevich, inzhener; ZAKS, Saveliy L'vovich, kandidat tekhnicheskikh nauk; KUZIN, Mikhail Ivanovich, inzhener; POLOZKOV, Vladimir Tikhonovich, kandidat tekhnicheskikh nauk; SUKHOV, Vasiliy Pavlovich, inzhener; SULTANOV, D.K., inzhener; STEKL'CHUK, Nikolay Antonovich, inzhener; TERNYAK, Ilya L'vovich, inzhener; KUSHNAREV, V.P., retsenzient; ROYZEN, I.S., otvetstvennyy redaktor; ZAMARAYEVA, K.M., vedushchiy redaktor; KOVALEVVA, A.A., vedushchiy redaktor; SAVINA, Z.A., vedushchiy redaktor; TROFIMOV, A.V., tekhnicheskiy redaktor

[Safety engineering and fire prevention in the petroleum industry]  
Tekhnika bezopasnosti i protivpozarnaya tekhnika v neftianoi promyshlennosti. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1956. 508 p.

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redaktor; AL'TMAN, T.B. redaktor izdatel'stva.

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1. Direktor Vsesoyuznogo nauchno-issledovatel'skogo instituta po  
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Scientific research work of the All-Union Scientific Research  
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(Industrial safety)

22(0)

SOV/92-59-3- 3 /44

AUTHOR: Sultanov, D.K., Director

TITLE: New Techniques For the Safety of Workers (Za novyyu tekhniku bezopasnosti truda)

PERIODICAL: Neftyanik, 1959, Nr 3, pp 26-29 (USSR)

ABSTRACT: Considerable funds are appropriated in the Soviet Union to protect labor by instituting safety precautions. As a result, the number of accidents and injuries to workmen has been substantially reduced. Important contributions to the protection of labor and safety precautions was made by the All-Union Scientific Research Institute of Safety Engineering. This institute developed new designs for equipment which would assure the safety of workers engaged in petroleum production. Among other things, the institute developed a device for installing protective membranes on drilling rig pumps (Fig. 1 and 2), a shelter to protect the driller (Fig.3), a movable cradle for the man who lowers casing pipes, universal clamps for loading a perforator (Fig. 4), etc. The

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New Techniques (Cont.)

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principal cause of a compressor explosion is the deposition of oil in air conduits. Therefore it becomes necessary periodically to flush the compressor unit with caustic soda. This operation is cumbersome and does not always produce the desired result. The institute proposed, therefore, the use of washing agents which would continuously remove the oil from the compressor unit. The analysis of these washing agents, made by the institute, revealed that the best results are obtained by using a 2-3% sulfonate solution, which makes the flushing of air conduits unnecessary. The institute also conducted tests to analyze material used in constructing various devices, protective membranes, valves, etc. It also developed a safe lighting system, and a mobile lighting system to be used during oil well overhauling. Among other things, the institute suggested the introduction of protective equipment for manometers of the drilling rig pumps (Fig. 5). Further efforts are made by the institute to promote the safety of petroleum industry workers. There are 5 figures. The continuation of this article will be found in the next issue of Neftyanik.

ASSOCIATION: VNIITB(The All-Union Scientific Research Institute for Safety Engineering)

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KUTUKOV, A.I., red.; ZAYTSEV, A.P., red.; DROGALIN, G.V., red.; POLESIN, Ya.L., red.; KOSTYUKOV, N.M., red.; KURAS, D.M., red.; LUZHNIKOV, A.M., red.; RODIONOV, I.S., red.; BLOKH, S.S., red.; SULTANOV, D.K., red.; BIBILUROV, V.P., red.; PETROV, A.I., red.; KHARCHEVNIKOV, N.M., red.; ANDRIANOV, K.I., red.; GADZHINSKAYA, M., red.izd-va; BERESLAVSKAYA, L.Sh., tekhn.red.

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Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960.

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  2. TSentral'nyy apparat Gosgortekhnadzora RSFSR (for Kutukov, Zaytsev, Drogalin, Polesin, Kostyukov, Kuras, Luzhnikov, Rodionov, Blokh). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut po tekhnike bezopasnosti (for Sultanov). 4. Upravleniya ukrugov Gosgortekhnadzora RSFSR (for Bibilurov, Petrov, Kharchevnikov).
  5. TSentral'nyy komitet profsoyuza rabochikh neftyanoy i khimicheskoy promyshlennosti (for Andrianov).
- (Oil fields--Safety measures)  
(Gas industry--Safety measures)

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T.A., red.Sizd-va

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SULTANOV, D. (g.Baku); ESTRIN, R. (g.Baku)

Improve working conditions for oil-field workers. NTO 3 no.6:48-49  
Je '61. (MIRA 14:6)

1. Predsedatel' sektsii tekhniki bezopasnosti Azerbaydzhanskogo  
respublikanskogo pravleniya nauchno-tehnicheskogo obshchestva  
neftyany i gazovoy promyshlennosti (for Sultanov). 2. Uchenyy  
sekretar' sektsii tekhniki bezopasnosti Azerbaydzhanskogo  
respublikanskogo pravleniya nauchno-tehnicheskogo obshchestva  
neftyany i gazovoy promyshlennosti (for Estrin).  
(Azerbaijan—Oil fields—Safety measures)

SULIN' V. D.K.

Carry out the program of the improvement of working conditions for oil-field workers. Bezop. truda v prom. 5 no.10:9-10 o '61.  
(MIRA 14:10)

1. Direktor Vsesoyuznogo nauchno-issledovatel'skogo instituta po tekhnike bezopasnosti v neftyanoy promyshlennosti (VNIITB).  
(Oil fields--Safety measures)

SULTANOV, D.K.

New achievements of the All-Union Petroleum Research Institute on  
Safety Engineering. Bezop.truda v prom. 7 no.3:24-26 Mr '63.  
(MIRA 16:3)

1. Direktor Vsesoyuznogo neftyanogo nauchno-issledovatel'skogo  
instituta po tekhnike bezopasnosti.  
(Oil fields--Equipment and supplies)

SULTANOV, D.S., dotsent

Efficient method of processing the long stems of kenaf. Sbor.nauch.-  
issl.rab.TTI no.12:129-131 '61. (MIRA 15:11)  
(Ambari hemp)

243500

28017

S/061/61/000/015/006/139

B101/S110

AUTHORS: Sultanov, E. M., Khelilov, E. Kh.

TITLE: Study of the laws of luminescence extinction of some polycrystalline crystal phosphors by the oscillographic method

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 15, 1961, 31, abstract  
156212 (Izv. AN AzerbSSR. Ser. fiz.-matem. i tekhn. n.,  
no. 3, 1960, 31-37)

TEXT: The effect of the concentration of activators (Ag, Cu, Mn) and of the exciting light of various wavelengths on the extinction of luminescence I of ZnS, ZnS-CdS, SiZn crystal phosphors was studied by the method of "partial times" (Tolstoy, N. A., Feofilov, P.P. "Uspekhi fiz. nauk", 1950, 41, 44). The velocity with which the curves  $I(t)$  ( $t$  = time) are flattened, decreases with increasing wavelength of the exciting light. On the basis of the experimental data obtained a linear dependence of the instantaneous relaxation times ( $\theta$ ) on  $t$  was established. [Abstracter's note: Complete translation.]

Card 1/1

S/058/61/000/012/029/083  
A058/A101

AUTHORS: Sultanov, E. M., Khelilov, E. Kh.

TITLE: Oscillographic investigation of laws of rise and attenuation of luminescence in some crystal phosphors

PERIODICAL: Referativnyy zhurnal, Fizika, no. 12, 1961, 223-224, abstract 12V522 ("Tr. In-ta fiz. An AzerbSSR", 1960, no. 10, 52-68, Azerb., Russian summary)

TEXT. There is considered a technique for studying laws of rise and attenuation of fast ( $10^{-7}$  -  $10^{-1}$  sec) luminescence relaxation processes in luminescent systems, as well as a method for immediate measurement of relaxation time  $\tau$ . Special attention was paid to the method using the oscillographic phosphoroscope proposed by N. A. Tolstoy and P. P. Feofilov, which has many advantages over other methods. There is given a short description of the oscillographic phosphoroscope assembled and manufactured by the Physical and Mathematical Institute of the Academy of Sciences of the Azerbaydzh SSR. Results of experiments obtained by the "rectification" and "partial-time" methods are listed in tables and graphs. Measurements show that processes of the

Card 1/2

Oscillographic investigation of laws ...

S/058/61/000/012/023/087  
A058/A101

initial stage of luminescence attenuation ( $t < 0.001 - 0.0015$  sec) for ZnS - Ag crystal phosphors with two different concentrations ( $C = 1.4 \cdot 10^{-4}$  g/g and  $C = 2.8 \cdot 10^{-4}$  g/g) almost obey exponential law; then, beginning with  $t > 0.0015$  sec, they deviate from exponential law and luminescence attenuation proceeds according to hyperbolic law.

[Abstracter's note: Complete translation]

Card 2/2

SULTANOV, F. A.

Greater attention to low-yield wells. Neftianik 2 no.9:12 S '57.  
(MLRA, 10;9)

1. Inzhener-geolog uchastka No.1 neftepromysla No.2 upravleniya  
Fervomayneft'.

(Petroleum engineering)

SULTANOV, F. F.

"Changes in the Permeability of Blood Capillaries in Relation to Akrikhin  
(Atabrin) Under Various Functional Conditions of the Central Nervous System."  
Cand Med Sci, Turkmen Medical Inst, Ashkhabad, 1953. (RZhBiol, No 7, Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher  
Educational Institutions (12)  
SU: Sum. No. 556, 24 Jun 55

SULTANOV, F.Y.

Effect of increased excitability of certain branches of the central nervous system on capillary permeability. Izv.AN Turk.SSR no.1:  
72-76 '55. (MLRA 9:5)

I. TurkmenSKIY gosudarstvennyy meditsinskiy institut imeni I.V.  
Stalina. (CAPILLARIES) (NERVOUS SYSTEM)

YUSIN, V.A.; SULTANOV, F.F.

Effect of overheating on the permeability of blood capillaries.  
(MLRA 9:5)  
Izv. AN Turk. SSR no. 4:69-75 '55.

1. Turkmenaskiy gosudarstvennyy meditsinskiy institut imeni I.V.  
Stalina.  
(CAPILLARIES)

SULTANOV, F.F.

USSR/Human and Animal Physiology - Effect of Physical Factors.

R-14

Abs Jour : Referat Zhur - Biologiya, No 16, 1957, 71297

Author : Yusin, V.A., Sultanov, F.F.

Inst : Data on the Study of Capillary Permeability of the Brain  
Title : and Inner Organs in Ultra-Violet Irradiation.

Orig Pub : AN TuSSR, 1956, No 2, 54-59

Abstract : The heads of white rats were irradiated by a mercury-quartz lamp at a distance of 30 cm in the course of 20 minutes. Acrychin (1 ml/200 gm) in CMR percent HCl solution, which did not react with the organism, but could be easily determined by a luminescent analysis was administered. After a single irradiation, within 24 hrs, an increased capillary permeability in the brain and in the inner organs towards acrinin was observed. The authors correlate this fact with the functional changes in the central nervous system due to the ultra-violet

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Card 1/2

"SULTANOV F. F. EXCERPTA MEDICA Sec 2 Vol 12/3 Physiology Mar 59

1251. THE EFFECT OF SINGLE AND REPEATED OVERHEATING ON THE  
PERMEABILITY OF BLOOD CAPILLARIES (Russian text) - Sultanov

F. F. - BJULL. EKSP. BIOL. MED. 1958, 45/3 (56-60) Tables 1

Experiments were performed on white rats. It was demonstrated that overheating is connected with significant increase of permeability of blood capillaries in internal organs and in the brain to acrichin. Reflex processes play an important role here and the change of permeability depends on the functional condition of the organism. Increase of permeability of lung capillaries, as well as other compensatory mechanisms, takes place prior to increase of the body temperature. This, evidently, points to an adaptive role of this factor. After repeated overheating the increase of the vascular permeability is less than when it is done only once. This shows that the factor of permeability adapted itself to overheating.

PEREL'MAN, E.L.; SULTANOV, F.F.

Effect of overheating on changes in the content of ascorbic acid in blood and organs of albino rats. Izv. AN Turk. SSR. Ser. biol. nauk no.1:48-53 '62. (MIRA 15:3)

1. Institut zoologii i parazitologii AN Turkmeneskoy SSR  
i Turkmeneskiy meditsinskij institut.  
(ASCORBIC ACID)  
(TEMPERATURE--PHYSIOLOGICAL EFFECT)

SULTANOV, F.F., kand.med.nauk (Ashkhabad)

Dynamics of the absorption of radioactive iodine by the thyroid  
gland during the short-term action of high temperature. Probl.  
endok.i gorm. no.4:51-52 '62. (MIRA 15:11)

1. Iz kafedry patologicheskoy fiziologii (zav. - zasluzhennyy  
deyatel' nauki Turkmeneskoy SSR prof. V.A. Yusin) Turkmeneskogo  
meditsinskogo instituta.  
(THYROID GLAND) (IODINE IN THE BODY)  
(HEAT-PHYSIOLOGICAL EFFECT)

SULTANOV, F.F., kand.med.nauk

Effect of high temperature on blood proteins and protein fractions.  
Zdrav.Turk. 7 no.2:17-21 F '63. (MIRA 164)

1. Iz kafedry patologicheskoy fiziologii (ispolnyayushchiy  
obyazannosti zaveduyushchego - F.F.Sultanov) Turkmen'skogo  
meditsinskogo instituta (nauchnyy rukovoditel' - prof. V.A.Yusin).  
(BLOOD PROTEINS) (TEMPERATURE--PHYSIOLOGICAL EFFECT)

SULTANOV, F.F. (Ashkhabad)

On the mechanism of changes in vascular tissue permeability  
following the action of high external temperatures on the  
organism. Pat.fiziol. i eksp. terap. 7 no.2:68 Mr-Ap'63.  
(MIRA 16:10)

1. Iz kafedry patologicheskoy fiziologii (zav. F.F.Sultanov)  
Turkmenskogo meditsinskogo instituta.  
(CAPILLARIES—PERMEABILITY)  
(HEAT—PHYSIOLOGICAL EFFECT)

PEREL'MAN, E.L.; SULTANOV, F.F.

Effect of ascorbic acid on the function of the adrenal glands under the influence of high external temperature.  
Zdrav. Turk. 7 no.4: 3-6 Ap'63. (MIRA 16:6)

1. Iz instituta krayevoy meditsiny AN Turkmenской SSR (dir.-A.Kh. Babayeva) i Kafedry patologicheskoy fiziologii (zav. F.F. Sultanov) Turkmenского государственного медитинского института.

(ADRENAL GLANDS) (ASCORBIC ACID)  
(HEAT-PHYSIOLOGICAL EFFECT)

SULTANOV

Interchangeability of collar conic threaded joints. Azerb. neft.  
khoz. 36 no.9:43-45 S '57. (MIRA li:2)  
(Oil well drilling--Equipment and supplies)

SULTANOV, F.M.

Experimental testing of the interchangeability of collar threaded  
joints. Azerb. neft. khoz. 36 no.12:34-36 D '57. (MIRA 11:3)  
(Oil well drilling--Equipment and supplies)

SULTANOV, F. M.: Master Tech Sci (diss) -- "The problem of interchangeability of threaded, conic machine connections". Moscow, 1958. 17 pp (Min Higher Edno USSR, Moscow Order of Labor Red Banner Inst of the Oil-Chem and Gas Industry im I. M. Gubkin, Chair of the Technology of Machinebuilding), 150 copies (KL, No 6, 1959, 1<sup>st</sup>)

SULTANOV, P.M.

New method for measuring half the profile angle of threads of  
conical collar thread ring-gages. Izv. vys. ucheb. zav.; neft' i  
gaz no.2:125-126 '58. (MIRA 11:8)

1. Zavod im. leytenanta Shmidta.  
(Measuring instruments)

SULTANOV, F.M.

Measuring the hardness of surfaces of supporting parts of three  
roller bits. Azerb. neft. khoz. 39 no.5:38-39 My '60.  
(MIRA 13:10)

(Boring machinery--Testing)

AVAKOV, V.A.; KEVORKOV, Yu.A.; SULTANOV, F.M.; SULTANOV, S.G.

Using corrected spur gearing in the petroleum industry. Azerb.  
neft. khoz. 40 no.5:39-41 My '61. (MIRA 16:12)

"APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653910012-3

AVAKOV, V.A.; KEVORKOV, Yu.A.; SULTANOV, F.M.; SULTANOV, S.G.

Designing spur gears with the correction coefficients  $\{1=\xi_2\}$ , 0, 6.  
Azerb. neft. khoz. 40 no.6:40-43 Je '61. (MIRA 14:8)  
(Gearing, Spur)

APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653910012-3"

AVAKOV, V.A.; KEVORKOV, Yu.A.; SULTANOV, F.M.; SULTANOV, S.G.

Overlapping of gear transmission with correction ratio  $\xi_1 = \xi_2 = 0.6$ .  
Azerb. neft. Ehoz. 41 no.1:44 Ja '62. (MIRA 16:7)

(Gearing, Spur)

SULTANOV, F.S., agronom po zashchity rasteniy

Our experience in the control of murine rodents. Zashch.  
rast. et vred. i bol. 5 no.9:40 S '60. (MIRA 15:6)

1. Baylinskaya rayonnaya traktornaya stantsiya, Tatarskaya  
ASSR.  
(Tatar A. S. S. R.—Rodent control)

SULTANOV, F. S.

SULTANOV, F. S.: "Some results of instrumental studies of earthquakes in the Shemakha zone" (Detecting the presence and causes of azimuthal anomalies in the distribution of seismic waves). Moscow, 1955. Acad Sci USSR. Geophysical Inst. (Dissertation for the Degree of Candidate of PHYSICOMATHEMATICAL Sciences)

SO: Knizhnaya Letopis' No. 51, 10 December 1955

SULTANOV, P.S.

Determining the presence and causes of azimuthal anomalies in  
the region explored by the Azerbaijan seismic expedition of 1957  
(in Azerbaijani with summary in Russian). Dokl.AN Azerb. SSR  
no.6:627-628 '57. (FZM 10:3)  
(Seismometry)

SULTANOV, F.S.; SULTANOVA, Z.Z.; ALIYEVA, S.M.

Small seismic station. Dokl.AN Azerb.SSR 15 no.12:1123-1127  
'59. (MIRA 13:4)

1. Institut geologii AN AzerSSR. Predstavлено академиком  
АН АзерССР М.-А Кашкяном.  
(Apsheron Peninsula--Seismology)

KRAT, V.A.; SULTANOV, F.; SORIN, S.I.

Work of the expedition for the investigation of the astro-climate of Azerbaijan and selection of a site for construction of the Shemakha Astrophysical Observatory. Izv. AN Azerb. SSR Ser. fiz.-mat. i tekhn. nauk no.3:151-160 '60.  
(Shemakha--Astronomical observatories) (MIRA 13:11)

11529  
S/233/62/000/004/001/001  
B104/B102

26.25.32  
AUTHORS: Efendiyev, G. A., Sultjanov, F. S., and Iskenderov, R. N.

TITLE: Thermo-emf of thin bismuth layers

PERIODICAL: Izvestiya Akademii nauk Azerbaydzhanskoy SSR. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 4, 1962, 65 - 69

TEXT: In the studies of the Bi-Se and Bi-Te systems Bi was evaporated in vacuo and condensed onto chemically decontaminated glass plates ( $20 \cdot 90 \text{ mm}^2$ ,  $70^\circ\text{C}$ ). The layers were from 80 to 20000  $\mu$  thick. In the experimental arrangement (Fig. 1) the glass plate was laid onto two brass electrical heaters at different temperatures. The thermoremf and the temperatures were measured by compensation methods using the two copper-constantan thermocouples  $T_1$  and  $T_2$  at an atmospheric pressure in films of continuously decreasing thicknesses. The contact pressure of the thermocouples could be varied by the two loads  $P_1$  and  $P_2$ . The thermocouples were 8 mm apart. The temperatures of the hot junctions were  $40 - 50^\circ\text{C}$ , and the temperature drop

Card 1/3

NURMAGAMBETOV, S., Geroy Sovetskogo Soyuza; BALTABAYEV, I. (Alma-Ata);  
SULTANOV, G. (Alma-Ata); BESCHASTNOV, P.; ZERSHCHIKOV, N.  
(Alma-Ata); KOTEL'NIKOV, I. (Alma-Ata); KORZH, I.

Letters from Kazakhstan. Voen. znan. 40 no.4:18-20 Ap '64.  
(MIRA 17:6)

1. Nachal'nik shtaba grazhdanskoy oborony Kazakhskoy SSR (for  
Nurmagambetov). 2. Predsedatel' ispolnitel'nogo komiteta  
rayonnogo Soveta deputatov trudyashchikhsya i nachal'nik  
grazhdanskoy oborony, Alma-Ata (for Baltabayev). 3. Starshiy  
instruktor Kazakhskogo respublikanskogo komiteta Vsesoyuznogo  
dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu  
SSSR (for Beschastnov). 4. Nachal'nik otryada pervoy medi-  
tsinskoy pomoshchi rayonnoy bol'nitsy No.2, g. Talgar (for Korzh).

KOSHELEVA, L.M.; MAMEDOVA, A.R.; PISHNAMAZZADE, B.F.; RZAYEVA, S.Z.; SULTANOV,  
G.A.; KHALILOV, A.Kh.; BYBATOVA, Sh.E.;

On the possible presence of seven-membered naphthenic hydro-  
carbons in petroleum. Dokl. AN Azerb. SSR 10 no. 6: 421-426 '54.  
(MIRA 8:10)

1. Institut nefti Akademii nauk Azerbaydzhanskoy SSR i Institut  
fiziki i matematiki Akademii nauk Azerbaydzhanskoy SSR. Pred-  
stavлено deystvitel'nym chlenom Akademii nauk Azerbaydzhanskoy  
SSR V.S.Gutryya.

(Naphthene) (Petroleum)

XHALILOV, A.Xh.; SULTANOV, A.M.; SULTANOV, G.A.

Light filter transmission spectra. Trudy Inst.fiz.i mat,AN Azerb,SSR  
8:91-99 '56. (MLRA 10:5)

(Light filters) (Spectrum analysis)

"APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653910012-3

SULTANOV, G. A.

141 24 6 101322NSA L 10352151 107W 17 11 11120 10 87

APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653910012-3"

KHALILOV, A.Kh.; SULTANOV, G.A.

Effect of the molecular interaction on electron absorption spectra  
of molecules of liquids [in Azerbaijani with summary in Russian].  
Trudy Inst. fiz. i mat. AN Azerb. SSR. 9:106-114 '58.

(AIRA 12:2)

(Liquids--Spectra)

S/058/61/000/003/003/027  
A001/A001

Translation from: Referativnyy zhurnal, Fizika, 1961, No. 3, p. 179, # 3V154

AUTHORS: Khalilov, A. Kh., Sultanov, G. A.

TITLE: Investigation of Absorption Dichroism of Thin Films With Artificially Oriented Molecules

PERIODICAL: Izv. AN AzerbSSR. Ser. fiz.-matem. i tekhn. n.", 1960, No. 1, pp.35-39, (Azerb. summary)

TEXT: The authors investigated dichroism of absorption by polystyrene thin films containing molecules of some organic substance with  $\pi$ -electronic absorption bands in the visible and near ultraviolet regions. Molecules in the polystyrene film were pre-oriented along their extended axes by 1-to 3-fold stretching of the film. Polarization absorption spectra were taken with an C $\phi$ -4 (SF-4) spectrophotometer. It was found that dichroism grows with multiplicity of stretching in all the investigated substances; this indicates a relation between dichroism of orientation and inherent dichroism of molecules. In the same substance, dichroism in different absorption bands is almost the same, but in different substances ✓

Card 1/2

S/058/61/000/003/003/027  
A001/A001

Investigation of Absorption Dichroism of Thin Films With Artificially Oriented Molecules

dichroism is the greater, the more oblate ellipsoid represents the spatial configuration of the molecule.

P. Kard

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

XHALILOV, A.Kh.; SULTANOV, G.A.

Effect of the adsorption of molecules on the surface of semiconducting crystals on the diffuse reflection spectrum of crystals. Izv. AN Azerb. SSR Ser. fiz.-mat. i tekhn. nauk no.3:59-63 '60.

(MIRA 13:11)

(Semiconductors--Spectra)

SULTANOV, G.A.

Socially dangerous actions of schizophrenia patients with a leading hypochondriac syndrome. Vop.klin., patog. i lech. shiz. no.1:135-137 '64. (MIRA 18:5)

l. Dispanserno-diagnsticheskiy otdel (zav. - doktor med.nauk A.G.Ambrumova) Gosudarstvennogo nauchno-issledovatel'skogo instituta psikiatrii Ministerstva zdravookhraneniya RSFSR.

"APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653910012-3

SULTANOV, R.S.

Early detection of obliterating emphysema during a dispensary examination of cotton growers. Vestn. med. chir. 42 no.6:52-55 Je '65.  
(MIRA 18:9)

APPROVED FOR RELEASE: 08/26/2000

CIA-RDP86-00513R001653910012-3"

1970, . . .

"Critical analysis of Elements in the Credit of Astrology and Irrationality of the  
Mythological aspect of Science (Critical Analysis of Oliver's Hypothesis on the Origin  
of Astrology)." - Moscow: Order of Lenin State University M. V. Lomonosov.

Dissertation presented for science and engineering degree in Moscow during 1971.

No. 89-10-10, 1 May 71.

SULTANOV, G.F.

Theoretical distribution of elements for orbits of fragments from  
a hypothetical planet Olbers. Soob.GAISH no.88/89:54-60 '53. (MLRA 7:5)  
(Orbits)

SULTANOV, G.F.

Two-fold regularized diagram of the Gauss type. Dokl.AM Azerb.SSR  
12 no.2:87-89 '56. (MLRA 9;8)

1. Institut fiziki i matematiki AM Azerb. SSR. Predstavleno akade-  
nikom AN Azerbaydzhanskoy SSR Z.I. Khalilovym.  
(Problem of three bodies)

SULTANOV, G.P.

Astronomical research in Azerbaijan. Trudy Sekt. astrofiz. AN  
Azerb. SSR 1:5-9 '59. (MIRA 13:3)  
(Azerbaijan--Astronomy)

SULTANOV, G.F.

Distribution of secondary fragments of a hypothetical planet according  
to the value of their orbit elements. Trudy Sekt. astrofiz. AN Azerb.  
SSR 1:10-21 '59. (MIRA 13:3)  
(Cosmogony) (Planets, Minor)

SUITANOV, G.P.

Empirical distribution of asteroids. Trudy Sekt. astrofiz. AN  
Azerb. SSR l:22-42 '59.  
(Planets, Minor)

KASHKAY, M.A.; SULTAEV, G.E.; EMINZADE, T.A.; ALIYEV, V.I.

Fall of the Yardymly iron meteorite. Izv. AN Azerb. SSR. Ser. geol.-  
geog. nauk no.1:169-175 '60. (MIRA 13:11)  
(Yardymly region--Meteorites)

KASHKAY, M.A.; SULTANOV, G.F.; EMINZADE, T.A.; ALIYEV, V.I.

Yardymly iron meteorite. Priroda 49 no.9:109-110 S '60.  
(MIRA 13:10)

1. AN AzerSSR, Baku.  
(Yardymly District--Meteorites)

L 11055-65 EXT(1)/ENG(r) Pe-5/Fac-2 AFETR/AFMD(t)/ASD(a)-5 GW

ACCESSION NR: AP4046259

S/0233/64/000/003/0115/0119

B

AUTHOR: Sultanov, G. F.

TITLE: Disintegration of a primary large body and the determination  
of the elements of its orbit

SOURCE: AN AzerbSSR. Izvestiya. Seriya fiziko-tehnicheskikh i  
matematicheskikh nauk, no. 3, 1964, 115-119

TOPIC/TAGS: asteroid, celestial body motion, astrodynamics, orbit  
element, planetary orbit, Jupiter planet, Mars planet

ABSTRACT: The author reports the results of some investigations,  
carried out for several years at the ShAO AN of the Azerbaijan  
SSR to determine some schemes for the disintegration of primary  
major celestial bodies, the distribution of their fragments, and the  
derivation of empirical laws that would explain the origin of the  
asteroid belt between Mars and Jupiter. It is assumed that primary

Card 1/2

L 11055-65

ACCESSION NR: AP4046259

large bodies moving around the sun along an elliptic orbit broke up into small fragments at the instant when they were on the perihelion. On the basis of the integrals of motion used in the two-body problem, the author derives the coordinates of the orbit of the primary large body and the position of its plane. He shows simultaneously that the orbits of the secondary fragments cross the orbit of the primary body at different points and are situated in different planes. This gives grounds for assuming that the cause of the disintegration is an external rather than an internal force. Orig. art. has: 31 formulas.

ASSOCIATION: None

SUBMITTED: 00

SUB CODE: AA

NR REF Sov: 000

ENCL: 00

OTHER: 000

Card 1 2/2

SULTANOV, G.F.; GUSEYNOV, R.E.

Development of astronomical research in Azerbaijan. Izv. AN Azerb.SSR.  
Ser.fiz.-tekh.i mat. nauk no.3:43-51 '64.

(MIRA 17:12)

ASLANOV, I.A.; SULTANOV, G.F., red.

[Catalog of the shifts and optical depths of Fraunhofer  
lines in the solar atmosphere] Katalog sdvigov i optiche-  
skikh glubin fraunhoferovykh linii v atmosfere solntsa.  
Baku, Izd-vo AN Azerbaidzhanskoi SSR, 1965. 110 p.  
(MIRA 18:11)

SULTANOV, G.I.; ZARABELOV, M.A.; KUZNETSOVA, M.M.; BLAZHEVICH, P.V.,  
otv.red.; PEVZNER, A.S., zav. red.izd-va; OSENKO, L.M., tekhn.red.

[Uniform time and pay standards for construction, assembly, and  
repair operations in 1960] Edinyye normy i rassmenki na stroi-  
tel'nyye, montazhnyye i remontno-stroitel'nyye raboty, 1960 g.  
Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam.  
Sbornik 5. [Making and assembling steel construction elements]  
Montazh i izgotovlenie stal'nykh konstruktsii. No.4. [Assembling  
welded cylindrical tanks and gasholders] Montazh tsilindricheskikh  
svarnykh rezervuarov i gazgol'derov. 1960. 23 p.

(MIRA 13:6)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam  
stroitel'stva. 2. Tsentral'noye normativno-issledovatel'skoye  
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ACCESSION NR: AP4024677

S/0103/64/025/002/0161/0166

AUTHOR: Sultanov, I. A. (Moscow)

TITLE: Resolvable equations for studying absolute stability of controlled systems with many controllers

SOURCE: Avtomatika i telemekhanika, v. 25, no. 2, 1964, 161-166

TOPIC TAGS: automatic control, controller, multicontroller plant, automatic control stability, automatic control absolute stability, multicontroller plant stability

ABSTRACT: Lur'ye-type resolvable equations are obtained for systems with any number  $m < n$  of controllers. Unlike that in A. M. Letov's work ("Stability of nonlinear controlled systems," Fizmatgiz, 1962), the author uses the Lyapunov function and a special S-procedure similar to that employed in Ayzerman's analysis of single-controller systems ("Absolute stability of controlled systems," Izd-vo AN SSSR, 1963). The functioning of a multicontroller automatic-control system is described by this set of ordinary differential equations:

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$$\frac{dz_i}{dt} = \sum_j a_{ij}x_j + \sum_l b_{il}y_l, \quad y_r = \varphi_r(\sigma_r), \quad \sigma_r = \sum_i c_{ir}x_i.$$

Here, all  $a_{ij}$ ,  $b_{il}$  and  $c_{ir}$  are constant real numbers, including zero;  $\varphi_r(\sigma_r)$  are any single-valued continuous real functions satisfying these conditions:

$$\varphi_r(0) = 0, \quad 0 < \frac{\varphi_r(\sigma_r)}{\sigma_r} < k_r,$$

where  $k_r$  are positive numbers or infinity. Observing the  $S > 0$  condition, m groups of n quadratic equations in each for mn unknowns  $x_{ijp}$  are developed:

a near-boundary set,

$$\sum_i p_{ij}b_{ip} = a_{ijp} - \frac{1}{2} \sum_i \beta_{ij}a_{ij}c_{ip} - \frac{1}{2}c_{ip} - \sum_p \sum_i u_{ijp}(a_{ijp}, \dots, a_{np})b_{ip},$$

and a boundary set,

$$a_{ijp} - \frac{1}{2} \sum_i \beta_{ij}a_{ij}c_{ip} - \sum_p \sum_i u_{ijp}(a_{ijp}, a_{ip}, \dots, a_{np})b_{ip} = \frac{1}{2}c_{ip},$$

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